

APPARATUS AND METHOD FOR SPATIALLY DETECTING OR
QUANTIFYING CHEMICAL SPECIES

ABSTRACT OF THE DISCLOSURE

(0047) An apparatus provides for the detection, the determination of the location or the spatial distribution, and/or the quantification of an amount of a chemical species by allowing the chemical species to come into contact with a fluid medium contained in a permeable capillary, transferring the content of the capillary after the contact to a detector, and detecting the chemical species as the content of the capillary is transferred to a detector. The fluid medium can contain a selected reagent that selectively interacts with the chemical species to produce an optically detectable interaction product. The location and amount of the chemical species are determined from a characteristic of the chemical species or its interaction product measured on the content of the capillary and the time at which the characteristic is detected. The apparatus may be used in a method for detecting, determining the location or the spatial distribution of, and quantifying a wide range of chemical compounds, such as for monitoring chemicals in environment and industrial facilities and determining products in a combinatorial experiment.